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AUTHOR Natriello, Gary
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ABSTRACT

This study explores the correlation between school reform and national economic performance by examining employer needs to fill entry-level positions in the workforce. A widely held assumption contends that the performance of the schools in preparing educated workers bears directly on the development of a productive and efficient economy. This study evaluates available relevant research. An introduction reviews the association between education and the world of work. The first section, "The Needs of Employers for New Employees," describes growing concern about the adequacy of entry workers. The second section, "Representative Studies of Employer Needs," summarizes 14 recent studies, including sampling strategies, substantive focus, and major findings. The third section, "Dimensions of Studies," discusses six key variables that influence interpretation of the findings. The fourth section, "Deficiencies of the Studies," finds significant weaknesses in the studies' interpretative value. The fifth section, "Interpreting the Results of Studies of Employer Needs," describes the following perspectives involved in hiring decisions: (1) technical; (2) control; (3) institutional; and (4) political. A concluding section finds the linkage among employer needs, school reform, and economic development to be unclear, based on current evidence. A list of 27 references is appended. (AF)

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Gary Natriello

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ERIC® Clearinghouse on Urban Education
Institute for Urban and Minority Education
Box 40, Teachers College, Columbia University
New York, New York 10027

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Trends and Issues #12

ERIC Clearinghouse on Urban Education/Institute for Urban and Minority Education

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ERIC Clearinghouse on Urban Education
Box 40, Teachers College
Columbia University
New York, New York 10027
212/678-3433

Director: Erwin Flaxman
Assistant Director: Robin Johnson Utsey
Managing Editor: Wendy Schwartz

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# WHAT DO EMPLOYERS WANT IN ENTRY-LEVEL WORKERS? AN ASSESSMENT OF THE EVIDENCE

## Introduction

The association between schooling and the world of work has long been recognized by U.S. education and social policy makers. As early as 1917 with the passage of the Vocational Education Act, Congress made policy based on an assumed connection between the education of the populace, its future performance in the workplace, and the future performance of the aggregate national economy.[1] The role of the schools in preparing individuals for roles in the workplace has received considerable attention in the most recent round of school reform efforts. A number of influential policy oriented reports, some by broad-based panels (e.g., National Commission on Excellence in Education, 1983; National Science Board Commission on Precollege Education in Mathematics, Science, and Technology, 1983) and others by groups dominated by those with particular interests in the welfare of U.S. business and the economy (Committee for Economic Development, 1984), have been based on assumptions about the positive contributions that successful educational programs might make to the development of a productive and efficient workforce. Indeed, the very future of the U.S. economy and the general welfare of the nation are portrayed as depending upon the performance of the American education system (National Commission on Excellence in Education, 1983).

## The Needs of Employers for New Employees

Perhaps the most direct and concrete expressions of the need for educated workers to fill positions in the workplace have come from employers who are confronted with the challenge of finding sufficient numbers of qualified individuals to fill entry-level positions. The demands of entry-level positions have the most direct implications for schools because, unlike those of candidates for higher level positions, the qualifications of candidates for entry-level positions are predominantly those related to performance in school.

Historically, of course, business leaders have long voiced their concerns about the adequacy of the preparation for work available to students in U.S. schools (Kantor, 1986). Recently, political leaders and educators alike have become particularly sensitive to the needs of employers for a skilled workforce as they have considered the reform of American education. Indeed, in many cases the driving force behind educational reform in various states has been the perception that increasing competition for economic development opportunities depends upon the availability of a sound education system and a quality workforce. This increasing concern about the provision of education services useful to firms in the American and world

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[1] Of course, the connection between schooling and work has always been only one of several reasons for the support of public education in the U.S., notable others being the preparation of spiritually correct, democratically oriented, and skilled individuals.

economies has led to studies of the expressed needs of employers for certain qualities in workers, particularly entry-level workers.

**Representative Studies of Employer Needs**

Studies of employer needs have been conducted in a variety of locations with particular purposes in mind; the basic format is generally the same. Employers are in some way asked to express their needs for personnel. Many of these studies are never circulated widely or published. However, in recent years a number of such studies have received attention from a wider audience, perhaps because of the growing emphasis on the role of education in economic development. Although it is not possible to review all of the studies of this type, examining a representative group of recent studies of employers' expressed needs provides sufficient information for considering the education-related demands of the modern workplace.[2]

For each study a brief overview is presented with particular attention to the sampling strategy, the substantive focus of the study, and the major findings.

Studies of Employer Needs for Entry-Level Workers

| | | |
|---|---|---|
| (1) | **Authors:** | Baxter and Young, 1982 |
| | **Sample:** | Survey of 96 Mississippi employers in the fields of manufacturing, service, public employment, wholesale, and retail. |
| | **Focus:** | Respondents were asked to rate selected skills and attitudes, indicate present evaluation methods, and identify skills and attitudes requiring more emphasis in high schools. |
| | **Major Findings:** | Attitudes related to work and associations with others were rated most useful and as requiring the most emphasis in high schools. Dependability received the highest rating in both cases. Among skills, those related to basic communication, thinking and problem solving, and basic arithmetic were rated highest, while those associated with specific job activities were rated lowest. |
| (2) | **Author:** | Brown, 1976 |
| | **Sample:** | Survey of 1,695 employers in a wide range of fields in the state of Texas. |
| | **Focus:** | Respondents were asked to identify the reasons for rejecting entry-level job applicants and terminating employees, and areas in which improvement is needed. |

[1] The studies included here were selected from the ERIC data base. Thus, each of these studies was prepared either as a journal article or as a research report or paper for wider distribution.

**Major Findings:** Low interest, previous job hopping, and poor communication skills were more frequent reasons for rejecting applicants. Absenteeism and lack of interest were most often mentioned as causes for termination. Concern for productivity, pride in work, and responsibility were most often mentioned as needing improvement.

(3) **Author:** Chatham, 1983

**Sample:** Interviews with personnel officers and first-line supervisors in eight San Francisco Bay area companies.

**Focus:** Respondents were asked about their experiences with young workers in entry-level jobs.

**Major Findings:** Characteristics that affected employee selection or performance included: communication skills, appearance, stable work experience, self-confidence, interviewing skills, desire to learn, accurate application, grammar, and the desire to advance.

(4) **Author:** Chung, 1979

**Sample:** Surveys of presidents and personnel directors from 105 firms in the Stamford, Connecticut, area.

**Focus:** To identify the nature of the mismatch of jobs and skills in the area.

**Major Findings:** Entry-level workers were rated as deficient in basic skills in math, reading, and writing. Entry-level workers also lacked career goals and enthusiasm for the job.

(5) **Authors:** Committee for Economic Development, 1984

**Sample:** Surveys of 678 large firms, 626 small firms and 500 post-secondary institutions.

**Focus:** To solicit ratings of the importance of 64 identified attributes for entry-level success and for advancement in the workplace and of the difficulty of finding individuals with such attributes.

**Major Findings:** Positive work attitudes and generic cognitive skills were rated as more important than job-specific skills for entry-level workers by both large and small businesses. Ability to learn and thinking skills were rated as more important for advancement. Employers rated the important attributes as also being difficult to find in the applicant pool.

(6) **Author:** Crain, 1984

**Sample:** A survey of 1,912 employers who employed a national sample of American 22-year-old high school graduates in 1976 and 25-year-old high school or college graduates in 1979.

**Focus:** Respondents were asked to report on how they recruit and hire for a sample job in a randomized vignette format.

**Major Findings:** Nearly all respondents rated dependability as extremely important, 82% rated proper attitude and 74% rated being a good team member as extremely important. Basic adult literacy was rated as extremely important by 65.2%.

(7) **Author:** Gordon, 1985

**Sample:** Simulated hiring sessions conducted with 56 employers in Columbus, Ohio.

**Focus:** Employers were asked to rate young job seekers from application forms and interviews.

**Major Findings:** Relevant work experience, relevant post-secondary program, relevant skills, grades, and neatness were important in decisions based on applications. Attitude and grammar were the two critical factors in the interviews.

(8) **Author:** Gustafson and Groves, 1977

**Sample:** Interviews with 23 employers across the state of New Hampshire.

**Focus:** Respondents were asked to report on the procedures used to evaluate job applicants and employees, and to rate the importance of ten factors in work attitudes.

**Major Findings:** Affective competencies were always considered in hiring decisions. Employee evaluations depended heavily upon personal and attitudinal factors as well as cognitive and psychomotor skills. Among the work attitudes, trustworthiness and flexibility were rated as most important, followed by appearance, respectfulness, and cooperativeness.

(9) **Author:** Hulsart and Bauman, 1983

**Sample:** Interviews with 135 managers, owners, and supervisors, 130 entry-level employees, 45 military and 8 civilian instructors, and 57 young recruits in Colorado.

**Focus:** Employers and military personnel were asked about the basic skills needed in entry-level jobs available to those with a high school education. Young employees and recruits were asked to report on the quality of their high school preparation in basic employment skills.

**Major Findings:** The attitude of applicants was identified as particularly important in the application process. Employers were interested in individuals who accepted responsibility, had an interest in serving a client, could work cooperatively with others, could handle money, and who were dependable and punctual. The young workers generally agreed with the views of employers, but most young workers did not feel that they were unprepared and thought that the entry-level tasks were quite simple.

(10) **Author:** Illinois State Advisory Council on Adult, Vocational, and Technical Education, 1983

**Sample:** Hearings involving 100 employers and educators testifying before the Illinois State Council on Adult, Vocational and Technical Education

**Focus:** Witnesses were asked to provide opinions on the desired employment related outcomes of educational programs.

**Major Findings:** Educators and especially employers stressed the need for youth to develop proper attitudes about work and realistic expectations about job content and wages, along with basic skills. They noted that they are finding an increasing number of young people who are from 'homes they never had anyone get up and go to work in the morning.

(11) **Author:** Junge, Daniels, and Kantor, 1983

**Sample:** Surveys of 51 personnel administrators of the largest companies in the state of Illinois.

**Focus:** Respondents were asked to report on the level of basic skills needed in entry-level employees and the competence of secondary schoolgraduates.

**Major Findings:** There was a significant difference in the levels of skills desired and the levels found in secondary school graduates. Employers ranked the skills of communication and reasoning especially high. "Writing standard English sentences" was cited as the most serious deficiency. The skill category showing the smallest discrepancy was science.

(12) **Author:** Moon, 1983

**Sample:** Interviews with management support staff at 50 companies in 16 states.

**Focus:** Respondents were asked about the use of office technology, the skills, knowledge, and understandings of entry-level employees.

**Major Findings:** Almost every company noted the need to upgrade basic skills for support personnel, particularly language skills, basic math skills, and oral and written communication skills.

(13) **Author:** Owens and Monthey, 1983

**Sample:** Surveys of 780 employers in a stratified random sample of Oregon firms and interviews with representatives of 10 Oregon firms hiring over 55,000 people.

**Focus:** The study examined the views of private sector employers on vocational education.

**Major Findings:** Employers noted problems in three general areas: basic skills, work attitudes, and understanding of the business environment. Problem solving skills were often cited as a problem. While employers noted that students who had received training in specific job skills were generally proficient, they noted that employees

had difficulty generalizing those skills. Employers felt the school should be responsible for basic skills and employers should be responsible for specific technical skills. Over half of the respondents noted a lack of acceptable work values, 30% noted a lack of job skills and knowledge.

(14) **Author:** Wilms, 1983

**Sample:** Interviews with the chief employment and training officers at 172 firms from downtown Los Angeles and the planned industrial community of Torrence, California.

**Focus:** Respondents were asked identify one entry-level job for which training is important and comment on the desired qualities for entry-level employees, to clarify links between schools and employers, and to suggest policies for improving those links.

**Major Findings:** Most respondents (63%) reported that good work habits and positive attitudes were most important for success in the job. Substantially fewer respondents (23%) cited technical skills as most important, and fewer still (14%) cited linguistic and computational skills as most important. Employers also reported that technological changes have had little impact on skill requirements for entry-level jobs.

**Dimensions of Studies.** These studies vary along key dimensions that influence interpretation of their findings. These dimensions include the methods used to collect data, the formats used to ask questions of employers, the positions of respondents in the workplace, the entry-level positions about which questions are asked, the focus of the attributes about which questions are asked, and the extent to which the questions address education directly. Each of these dimensions can affect the nature of the study, the quality of the data produced, and the degree of confidence we can place in the results of the study.

First, several different methods were used to collect data on employer needs, ranging from surveys (e.g., Baxter & Young, 1982; Wilms, 1983) and interviews (Chatham, 1983; Gustafson and Groves, 1977) to public hearings (Illinois State Council, 1983) and hiring simulations (Gordon, 1985). If studies using different methods reveal similar patterns of results, however, we might be more confident of those results.

Second, several different formats were used to solicit information on what employers consider important for entry-level workers. Some studies asked employers to rate the importance of certain characteristics for entry-level employees (Wilms, 1983); other studies asked employers to rate the importance of characteristics and to identify deficits in characteristics among their young workers (Committee for Economic Development, 1984; Junge, 1983); and still other studies employed other methods. Baxter and Young (1982) asked employers to report on their current evaluation criteria as another source of data on what employers consider important. Brown (1976) asked respondents to identify the reasons for rejecting applicants and for terminating employees. The different conditions under which employers were questioned may result

in different patterns of responses. For example, the reasons for terminating employees may not be the same as the general characteristics desired in new employees.

Third, although some of the studies identified individuals in particular positions to respond to the interview or survey questions (Junge, 1983, [personnel administrators]; Chatham, 1983 [personnel officers and first-line supervisors]), others simply noted that respondents were "employers" (Baxter and Young, 1982). Obviously, individuals in different positions in employer organizations will have different degrees of exposure to entry-level workers and their performance. We might place more confidence in findings from studies involving individuals with access to the performance of entry-level workers and less confidence in findings from studies involving individuals who may simply be expressing a general opinion.

Fourth, most of the studies asked respondents to comment on entry-level positions in general (Hulsart & Bauman, 1983). A few of the studies provided a more concrete point of reference for respondents. Crain (1984) asked respondents to answer questions about recruitment and hiring for a specific job held by a subject in the 1972 National Longitudinal Survey (NLS), Gordon (1985) involved respondents in simulated hiring decisions for a particular position, and Wilms (1983) asked respondents to identify a job in their company and respond in terms of that job. Responses connected to particular positions provide much more specific information on the needs of employers and might give us greater confidence that the respondents have carefully considered the situation in a part of their own organization than would responses based on more general opinion.

Fifth, some of the studies asked respondents to comment on the characteristics required for entry-level positions (Wilms, 1983), while others asked respondents to focus on the basic skills requirements for such positions (Junge, et al., 1983). Studies which limit themselves to basic skills cannot provide information on the relative importance of basic skills and other employee characteristics. In view of the prominence of non-cognitive traits in studies inquiring about a broad range of characteristics, studies which focus solely on basic skills are likely to overstate the relative importance of such skills.

Sixth, some studies focused on the educational experiences of entry-level workers, particularly experiences with vocational education (Owens, 1983), while others simply asked about entry-level employees. It may be important to distinguish among responses regarding vocational education, those pertaining to schooling in general, and those inquiring about entry-level employees with no specific mention of schooling. Since the aims of vocational education and the population of students and employers served are different from those for schooling in general, patterns of employer responses may be influenced by the specific school experiences they are asked to consider. Moreover, asking employers to comment on entry-level employees in terms of either the vocational education they received or the general schooling they received may lead them to think of deficiencies in the educational process when considering problems with entry-level workers. On the other hand, studies which do not state or imply a connection between education and the performance of

entry-level employees may find that employers attribute problems with entry-level employees to factors other than the school, such as the family or the community.

**Results of the studies.** With these limitations in mind, it is still possible to assess the overall trends in the studies. The strongest trend is the importance that employers place on employee attitudes. In 11 of the 14 studies respondents cited the importance of proper attitudes among employees. The three studies in which attitudes were not cited focused only on basic skills. A second theme in these studies is the emphasis on basic skills as opposed to job specific skills. Employers were particularly interested in communications skills and problem-solving skills. Finally, employers also placed emphasis on an understanding of the work or business environment.

The results of these studies of employer needs for entry-level workers are rather clear and consistent. However, it is important to consider both the technical quality of these studies and the possible interpretations of their results.

**Deficiencies of the studies.** The quality of the studies varies dramatically from those directed at carefully drawn nationally representative samples of respondents identified by position and asked to comment on the characteristics desired of employees for specific positions (Crain, 1984) to those using local convenience samples of non-specific respondents asked to comment on the needs for employees in general (Gustafson & Groves, 1977). In fairness to the authors of these studies, it should be pointed out that the weaknesses in the designs tend to reflect the original impetus for the studies and the resource limitations under which they were administered. For our present purposes, they all suffer from certain deficiencies. Two general weaknesses apparent in the studies should be addressed in further studies of employer needs.

First, these studies lack a clear conceptual basis for asking about employee characteristics. When employers are provided with lists of characteristics to comment on, there appear to be no developed rationales for including certain characteristics and excluding others. While the inclusion of basic skills alone or basic skills plus other non-cognitive traits is the more notable arbitrary decision about which traits to include, none of the studies employs a comprehensive set of traits tied to any developed conceptual framework. Conclusions phrased in terms of what employers find most problematic in new workers may have as much to do with the traits they were asked to comment on as with their true needs.

Addressing this problem in studies of employee needs will require careful conceptual work to develop a taxonomy of work-related characteristics that might be associated with education.[3] Employing such

[3] Typologies such as those suggested by Dunnette (1983) are a step in the right direction.

taxonomies, even though they are not fully developed, would lead to studies of employer needs of much greater utility to employers and educators. Until such taxonomies are used in studies of employer needs the results obtained from them may be partial and misleading.

A second weakness that must be addressed in studies of employer needs has to do with the sampling processes used in such studies. Sampling strategies have typically been developed with more attention paid to the convenience of the investigator and less to the representativeness of the sample. In studies of employer needs, sampling involves more than the selection of individual respondents. Key sampling decisions must consider the kinds of positions held by respondents, the economic sectors and industries in which the respondents are based, the regions in which they are located, and the positions and tasks upon which responding employers are being asked to comment.[4] These sampling decisions must be made explicit if investigators wish to develop a sampling strategy that can be used to link the results of their studies to the appropriate domain of applicability. Until this is done, studies of employer needs will not provide a differentiated view of the needs for workers generated by our complex economy.

**Interpreting the Results of Studies of Employer Needs**

The interpretations derived from studies of employer needs must be approached with caution. In most cases the authors of these types of studies treat the results as expressions of the needs of employers based on the technical nature of the jobs for which they seek employees. Following this line of reasoning, we would assume that a change in the technical nature of jobs in firms in the economy might lead to a corresponding change in the nature of the desired characteristics of employees. The surveys of employer needs would then lead to changes in educational policies and practices designed to produce students/workers to fill those needs.

But employer hiring practices probably represent more than simply the expression of technical needs. As Cohen and Pfeffer (1986) observe, such hiring standards may be explained by other than just technical requirements. They detail four perspectives that might be employed to explain the hiring decisions of employers.

A *technical perspective* suggests that hiring decisions reflect the intellectual and technical complexity of the job. However, analyses by Collins (1979), Berg (1970), and Peaslee (1969) suggest that the connections between the skill requirements of work and educational requirements for jobs are not tight.

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[4] While it seems advisable at this point in the development of studies of employer needs to specify the positions respondents are being asked to comment upon, Cohen and Pfeffer (1986) have found that hiring standards across positions within an organization tend to be correlated.

A *control perspective* suggests that hiring standards are used to select employees on the basis of their general reliability and dependability, and on the basis of norms and values desired by the organization. Analyses by Bowles and Gintis (1976), Edwards (1976), and Collins (1979) support this perspective.

An *institutional perspective* argues that hiring standards are simply an accepted part of standard personnel practices. Such practices are seen as ways to communicate to the external world that the organization is behaving in socially acceptable ways (Meyer and Rowan, 1977; Meyer, 1980).

A *political perspective* holds that hiring standards are the result of the interplay of organizational actors and their relative power and interests in certain practices. For example, the personnel department of an organization would have an interest in the establishment of certain hiring practices (Baron, Dobin, & Jennings, 1986).

Each of these perspectives might be helpful in explaining and interpreting the patterns of results in the studies of employer needs. If technical factors were the only influence upon employer needs, we might expect employers to ask for individuals trained in specific technical skills for specific jobs. But the control perspective may explain the emphasis on proper employee attitudes that in most cases overshadows employer concern with skills. The political perspective might explain the emphasis on general skills as opposed to specific skills if personnel departments removed from the direct supervision of technical work have considerable influence in establishing hiring standards. Finally, the institutional perspective might explain the consistency in the patterns of results from various studies conducted in different locations and industries if employers are all subject to the same national norms for hiring practices.[5] Thus, studies of the expressed needs of employers for entry-level workers may tell us less about the connection between certain skills and attitudes and employee productivity, than they do about the factors leading employers to come to express such needs. Employer needs, whether the result of technical, control, institutional, or political forces, are quite real, and will have real implications for educators.[6]

## Conclusions

A common assumption of those undertaking studies of employer needs is that the result of such studies can be used to inform and direct efforts to reform and improve schools. Indeed, some studies of employer needs are conducted with just such action in mind. However, this review suggests that many questions

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[5] Wilensky and Laurence (1979) note that employers increasingly hire not for entry level jobs, but for promotion paths.

[6] Cohen and Pfeffer (1986) note that education and training requirements are set by more than just the technical requirements of specific jobs; they are also affected by the general technical nature of the work being done in an organization and by other political factors such as the presence of a personnel department.

remain to be considered and answered before we can be confident enough to use the findings of studies of employer needs as the basis for school reform with the expectation that changes in schooling will result in improvements in the economy. Employer expressions of needs for young workers are not collected carefully or systematically enough to improve our understanding of how the individual characteristics that might be developed with schooling can be more directly used to enhance productivity. Moreover, these employer expressions are subject to various interpretations, only some of which allow them to be taken as indicators of needs related to productivity. Furthermore, the conceptual systems employed in such studies generally fail to provide satisfactory definitions of both the individual characteristics and the productivity outcomes in the workplace. Thus at the present time, studies of employer needs, while proving quite effective in capturing headlines in the daily papers, are much less effective for informing us about the needs of employers for entry-level workers.

## REFERENCES


Baron, J.N., F.R. Dobin, and P.D. Jennings. "War and Peace: The Evolution of Modern Personnel Administration in U.S. Industry." *American Journal of Sociology*, 1986, 92:350-383.

Baxter, M.B. and J.L. Young. "What Do Employers Expect from High School Graduates?" *NASSP Bulletin*, 1982, 66:93-99.

Berg, I. *Education and Jobs*. New York: Praeger, 1970.

Bowles, S. and H. Gintis. *Schooling in Capitalist America*. New York: Basic Books, 1976.

Brown, K.W. "What Employers Look for in Job Applicants", *Business Education Forum*, 1976, 30:7.

Chatham, K.M. "Employment Practices with Entry-Level Workers." San Francisco: Far West Laboratory for Educational Research and Development, 1983, (ED 226 136).

Cohen, Y. and J. Pfeffer. "Organizational Hiring Standards." *Administrative Science Quarterly*, 1986, 31:1-24.

Collins, R. *The Credential Society*. New York: Academic Press, 1979.

Committee for Economic Development. Survey of Employer Needs. New York, NY: Committee for Economic Development, 1984 (mimeo).

Crain, R.L. "The Quality of American High School Graduates: What Personnel Officers Say and Do About It." Baltimore, MD: Center for the Social Organizational of Schools, The Johns Hopkins University, 1984.

Chung, H.C. *Views of Employers on the Jobs-Skills Mismatch Problem in the Stamford Area*. Bridgeport, Connecticut: University of Bridgeport, 1979.

Dunnette, M.D. "Aptitudes, Abilities, and Skills." Pp. 473-520 in M.D. Dunnette (ed.). *Handbook of Industrial and Organizational Psychology*. New York: Wiley, 1983.

Gordon, R. *Employer Hiring Decisions*. Columbus, OH: National Center for Research in vocational Education, Ohio State University, 1985, (ED 262 253).

Gustafson, R.A. and P.M. Groves. "How New Hampshire Employers Evaluate their Employees: Implications for Vocational Education." Concord, NH: New Hampshire Research Coordinating Unit for Vocational-Technical Education, 1977, (ED 149 030).

Hulsart, R. and P. Bauman. "Colorado Employability Skills Survey: Report of Results." Denver, CO: Colorado State Department of Education, 1983, (ED 240 380).

Illinois State Advisory Council on Adult, Vocational, and Technical Education. "Education for Employment Policy Study," *Speaking Freely*, 1983, 2:1-18.

Junge, D.A., M.H. Daniels, and J.S. Karmos. Perception of Business and Industry: Basic Skills Necessary for Successful Employment Compared to Competencies for Entry Level Employees. Carbondale, IL: Illinois State Board of Education, June 1983, (ED 252 703).

Kantor, H. "Work, Education, and Vocational Reform: The Ideological Origins of Vocational Education, 1890-1920." *American Journal of Education*, 1986, 94:401-426.

Meyer, J.W. and B. Rowan. "Institutionalized Organizations: Formal Structure as Myth and Ceremony." *American Journal of Sociology*, 1977, 83:340-363.

Meyer, M. "Organizational Structure as Signaling." *Pacific Sociological Review*, 1980, 22:481-500.

Moon, H.R. *A Study of the Use of Office Technology and the Changing Role of the Management Support Staff in the Modern Office.* Paper presented to the National Association of Business Education State Supervisors at the American Vocational Association Convention, Anaheim, CA. December, 1983.

National Commission on Excellence in Education. *A Nation at Risk: The Imperative for Educational Reform.* Washington, D.C.: U.S. Government Printing Office, 1983.

National Science Board Commission on Precollege Education in Mathematics, Science, and Technology. *Educating Americans for the 21st Century.* Washington, D.C.: National Science Foundation, 1983.

Owens, T.R. and W. Monthey. *Private Sector Views of Vocational Education: A Statewide Employer Survey.* Portland, OR: Northwest Regional Laboratory, 1983, (ED 239 046).

Peaslee, A.L. "Education's Role in Development." *Economic Development and Cultural Change*, 1969, 17:293-318.

Wilensky, H.L. and A.T. Lawrence. "Job Assignment in Modern Societies: A Re-Examination of the Ascription-Achievement Hypothesis." Pp. 202-248 in A.H. Hawley (ed.), *Societal Growth.* New York: Free Press, 1979.

Wilms, W.W. "The Limited Utility of Vocational Education: California Employers' Views." Berkeley, CA: University of California, Institute of Governmental Studies, 1983.